



# EPA Proposes Cleanup Plan for Area 1 of the Kalamazoo River

**Allied Paper/Portage Creek/Kalamazoo River Superfund Site**  
Kalamazoo, Michigan  
May 2015

## You are invited

EPA invites you to discuss the proposed cleanup plan for Area 1 of the Kalamazoo River.

EPA will hold a public meeting, Tuesday, May 19, at 6:00 p.m., at the Kalamazoo Nature Center, Cooper's Glen Auditorium, 7000 N Westnedge Ave. EPA representatives will present details of the plan and oral comments will be accepted and recorded by a court reporter.

## Read the proposed plan

The detailed proposed plan is available for review, in the information repositories and on the Web (see box on page 5).

## Public comment period

The public is encouraged to comment on the proposed plan from **May 4 through June 3**.

There are several ways to comment:

- Orally or in writing at the public meeting.
- Fill out and mail the enclosed form, or submit it at the meeting.
- Use the public comment form link at [www.epa.gov/region5/cleanup/kalproject/pubcomment.html](http://www.epa.gov/region5/cleanup/kalproject/pubcomment.html).
- Send a fax to 989-401-5508

EPA may modify the proposed cleanup plan or select another option based on new information or public comments, so your opinion is important.

The U.S. Environmental Protection Agency plans to clean up contaminated soil and sediment in part of the Kalamazoo River Superfund site called Area 1. EPA's plan is to remove sediment contaminated with polychlorinated biphenyls, or PCBs, in five hot spots and the Crown Vantage side channel. EPA also plans to excavate floodplain soil that has high levels of PCBs and replace with clean soil.

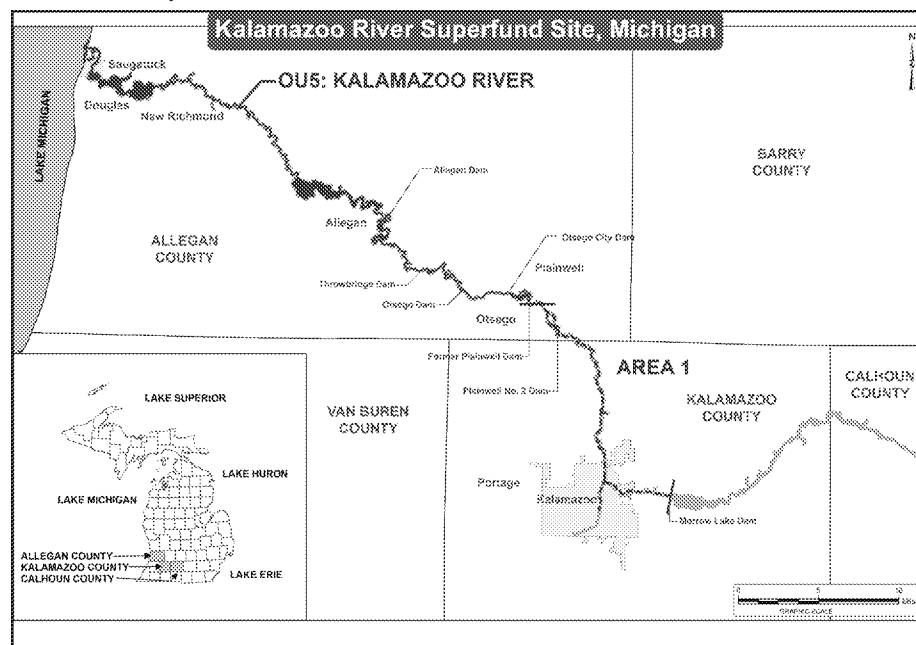
## Your comments are needed

EPA will be accepting comments on the proposed cleanup plan from May 4 through June 3 (see box, left). This fact sheet provides background information, describes cleanup options and explains EPA's recommendations. You can find more details in a document called the *Allied Paper/Portage Creek/Kalamazoo River Superfund Site Proposed Plan for Area 1 of Operable Unit 5*, available at [www.epa.gov/region5/cleanup/kalproject](http://www.epa.gov/region5/cleanup/kalproject) and at the local information repositories listed on Page 5. EPA wants your comments on the cleanup options and its recommendations as well as this technical report.

Before making its final decision on a cleanup plan, EPA will review all the comments it receives during the public comment period. EPA will respond to comments in a document called a "responsiveness summary." This will be part of the final cleanup plan called the "record of decision," or ROD.

## Background

Several paper mills along the Kalamazoo River and Portage Creek recycled various types of paper stock starting in the 1950s. This included carbonless paper that contained PCBs that were released into the mills' waste streams and eventually into the Kalamazoo River.



In 1990, the site was added to the National Priorities List due to the presence of PCBs in the sediment, fish and surface water of the Kalamazoo River. The site consists of 77 miles of the Kalamazoo River and a 3-mile stretch of Portage Creek. It is located in both Allegan and Kalamazoo counties of southwest Michigan (*see map, page 1*).

This proposed cleanup plan focuses on Area 1, which includes a 22-mile reach of the Kalamazoo River from Morrow Dam to the former Plainwell Dam, as well as the 3-mile stretch of Portage Creek from Alcott Street in Kalamazoo to its confluence with the Kalamazoo River (*see map below*). Area 1 flows through the communities of Comstock, Kalamazoo, Parchment and Plainwell.

### Current conditions

Since 1998, EPA has conducted several cleanups at the site to control the sources of PCBs. So far, the Agency has removed more than 300,000 cubic yards of contaminated material and cleaned up and restored more than 3 miles of riverbank. EPA also completed a study of the type and extent of contamination in Area 1 in 2012.

Most of the PCBs in Area 1 are in river sediment in isolated areas and are the focus of the sediment cleanup alternatives in the proposed plan (*see table, page 4*).

### For more information, contact:

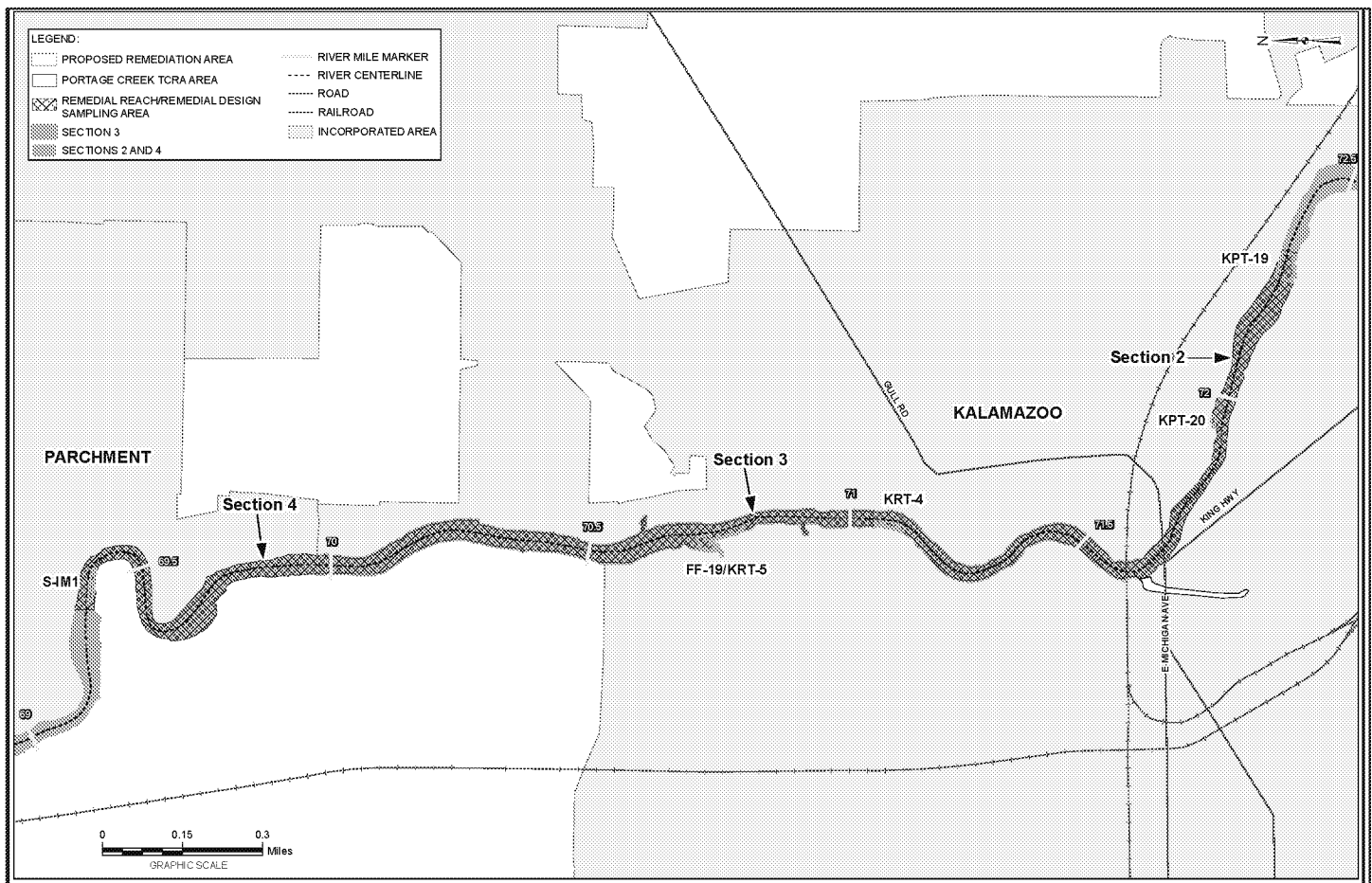
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Community Involvement Coordinator  
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In floodplain areas, the highest contaminated areas are located upstream from the former Plainwell Dam and around the two flow control structures of Plainwell No. 2 Dam.

### Why is cleanup needed?

EPA has studied the risks to human health and the environment. The study determined PCB contamination might pose unacceptable risk and hazards to people who may eat fish caught from the Kalamazoo River. Fish advisories are in place to warn people and anglers about the hazards of eating fish from the river. There are no restrictions in place to control human exposure to sediment, soil or surface water.



Map of Kalamazoo River Cleanup Area 1.

In addition, potential exposure to high levels of PCBs in soil may pose unacceptable risks and hazards to people engaging in recreational activities along the river. However, these risks are lower than the danger from eating fish.

Based on these studies, EPA experts believe the proposed cleanup plan is necessary to protect human health and the environment.

## Cleanup alternatives

EPA considered seven sediment cleanup alternatives and five floodplain alternatives. All alternatives, except the no-action options, include at least a 25-year long-term environmental monitoring program of fish, water, soil and sediment. This monitoring program helps make sure the cleanup goals are being met.

EPA developed cleanup alternatives for sediment and floodplain soil using combinations of different technologies to meet Area 1 cleanup goals. Each sediment and floodplain soil alternative identified below was evaluated in detail against the remedy selection criteria established by federal law (*see box, right*).

However, the last two criteria, state and community acceptance, will not be evaluated until after the comment period and public meeting.

## EPA's recommended alternative

The Agency proposes that sediment alternative S-3A and floodplain soil alternative FPS-4A be selected as the remedy for Area 1. For sediment, EPA believes alternative S-3A provides the best balance of the evaluation criteria among all the sediment options. It protects people and the environment, meets all federal and state requirements, and meets all cleanup objectives. It is also effective in the long-term, permanent, and is cost-effective.

For floodplain soils, EPA believes alternative FPS-4A provides the best balance of the evaluation criteria among all the floodplain soil alternatives. It protects people and the environment, meets all federal and state requirements, and meets all cleanup objectives. It is also effective in the long-term, permanent, and is cost-effective. Although floodplain soil alternative FPS-4A costs more than alternatives FPS-2 or FPS-3, it is cost-effective because it would achieve cleanup goals with limited habitat destruction, and would remove the contaminated soil instead of capping it. This would result in a greater degree of long-term effectiveness.

Full details about the proposed plan and the other alternatives considered can be found at the information repositories or on the web: [www.epa.gov/region5/cleanup/kalproject/index.htm](http://www.epa.gov/region5/cleanup/kalproject/index.htm).

## Explanation of evaluation criteria

- 1. Overall protection of human health and the environment.** Examines whether an option protects both human health and the environment. This standard can be met by reducing or removing pollution or by reducing exposure to it.
- 2. Compliance with applicable or relevant and appropriate requirements.** Ensures options comply with federal and state laws.
- 3. Long-term effectiveness and permanence.** Evaluates how well an option will work over the long term, including how safely remaining contamination can be managed.
- 4. Reduction of toxicity, mobility or volume through treatment.** Determines how well the option reduces the toxicity, movement and amount of pollution.
- 5. Short-term effectiveness.** Compares how quickly an option can help the situation and how much risk exists while the option is under construction.
- 6. Implementability.** Evaluates how feasible the option is and whether materials and services are available in the area.
- 7. Cost.** Includes not only buildings, equipment, materials and labor but also the cost of maintaining the option for the life of the cleanup.
- 8. State acceptance.** Determines whether the state environmental agency (in this case MDEQ) accepts the option. The EPA evaluates this criterion after receiving public comments.
- 9. Community acceptance.** Considers the opinions of the public about the proposed cleanup plan. The EPA evaluates this criterion after a public hearing and comment period.

## What are PCBs?

Polychlorinated biphenyls, or PCBs, belong to a broad family of man-made organic chemicals known as chlorinated hydrocarbons. PCBs were domestically manufactured from 1929 until their manufacture was banned in 1979. Although no longer commercially produced in the United States, PCBs may be present in products and materials produced before the 1979 PCB ban. Once in the environment, PCBs do not readily break down and may remain for long periods of time in air, water and soil.

PCBs have been demonstrated to cause cancer, as well as other adverse health effects on the immune system, reproductive system, nervous system, and endocrine system.

<b>Sediment Alternative</b>	<b>Description</b>	<b>Time to implement cleanup</b>	<b>Time to reach cleanup in fish</b>	<b>Long-term monitoring required?</b>	<b>Cost</b>
<b>S-1: No Further Action</b>	Required baseline to compare with other alternatives.	NA	87 years	No	\$0
<b>S-2: Monitored Natural Recovery (MNR), Institutional Controls (ICs) and Engineering Controls (ECs)</b>	No physical cleanup; relies on natural processes, site restrictions and physical barriers to the site.	Long-term monitoring and review of remedy every 5 years	87 years	Yes	\$2.7 million
<b>S-3A: Removal of Hot Spot Areas and Crown Vantage Side Channel, MNR, ICs and ECs (EPA's preferred alternative)</b>	Remove 19,500 cubic yards of sediment from five highly contaminated areas in Sections 2, 3 and 4 and the Crown Vantage side channel. Additional sampling in Sections 2, 3 and 4 to identify additional hot spots.	2 years	32 years	Yes	\$13.1 million - \$16.6 million
<b>S-3B: Removal of Hot Spot Areas, Capping for Crown Vantage Side Channel, MNR, ICs and ECs</b>	All actions in S-3A except replacing removal of Crown Vantage side channel with capping. Volume of sediment removed is reduced to 15,600 cubic yards.	2 years	32 years	Yes	\$12.2 million - \$15.7 million
<b>S-4A: Removal of Hot Spot Areas, Crown Vantage Side Channel and Section 3 River Channel Edges, MNR, ICs and ECs</b>	All actions in S-3A, plus excavation of sediment along the edges of Section 3 that exceed cleanup goals. The total volume of sediment removed is estimated at 63,900 cubic yards.	4 years	25 years	Yes	\$33.7 million - \$37.2 million
<b>S-4B: Removal of Hot Spot Areas and Section 3 Channel Edges, Capping for Crown Vantage Side Channel, MNR, ICs and ECs</b>	All actions in S-4A except replacing removal of Crown Vantage Side Channel with capping. Volume of sediment removed would be reduced to 59,900 cubic yards.	4 years	25 years	Yes	\$32.3 million - \$35.8 million
<b>S-5: Area 1-Wide Removal, MNR, ICs and ECs</b>	Total excavation of all highly contaminated sediment throughout the river in Area 1. Removal of 300,000– 490,000 cubic yards of sediment.	10 years	45 years	Yes	\$202 million - \$337 million

<b>Floodplain Alternative</b>	<b>Description</b>	<b>Time to reach cleanup</b>	<b>Long-term monitoring required?</b>	<b>Cost</b>
<b>FPS-1: No Further Action</b>	Required baseline to compare with other alternatives.	NA	No	\$0
<b>FPS-2: MNR, ICs, ECs</b>	No physical cleanup; relies on natural processes, site restrictions and physical barriers to the site.	NA	Yes	\$1.3 million
<b>FPS-3: Capping, ICs, and ECs</b>	Placing a 12-inch cap over 7 acres of floodplain soil in the former Plainwell Impoundment with high PCB concentrations; also relies on ICs and ECs.	1 year	Yes	\$3.8 million
<b>FPS-4A: Removal, ICs, and ECs (EPA's preferred alternative)</b>	Excavation of 11,300 cubic yards of floodplain soil with high levels of PCBs; also relies on ICs and ECs.	1 year	Yes	\$6.8 million
<b>FPS-4B: Removal, ICs, and ECs</b>	Total excavation in all of Area 1; remove 1.4 million cubic yards of floodplain soil with high PCB levels.	10 years	No	\$486 million

### For more information

You can read documents related to the Allied Landfill/Portage Creek/Kalamazoo River site at [www.epa.gov/region5/cleanup/kalproject](http://www.epa.gov/region5/cleanup/kalproject) or at these information repositories:

- U.S. EPA Record Center  
77 W. Jackson Blvd., 7th Floor  
Chicago, IL
- Charles Ransom Library  
180 South Sherwood  
Plainwell, MI
- Kalamazoo Public Library  
315 South Rose  
Kalamazoo, MI
- Waldo Library  
Western Michigan University  
1903 West Michigan Avenue  
Kalamazoo, MI
- Allegan Public Library  
331 Hubbard Street  
Allegan, MI
- Otsego District Library  
219 South Farmer Street  
Otsego, MI
- Saugatuck-Douglas Library  
10 Mixer Street  
Douglas, MI

## EPA Proposes Cleanup Plan, Seeks Public Comments

**Public Meeting**  
**Tuesday, May 19**  
**6:00 p.m.**

**Kalamazoo Nature Center**  
**Cooper's Glen Auditorium**  
**7000 N. Westnedge Ave.**

**Public Comment period May 4 to June 3**

If you will need special accommodations at the meeting, contact:

**Diane Russell**, Community Involvement Coordinator, 989-401-5507, [russell.diane@epa.gov](mailto:russell.diane@epa.gov)

*This fact sheet is printed on paper made of recycled fibers.*

**ALLIED PAPER/PORTAGE CREEK/KALAMAZOO RIVER SUPERFUND SITE:  
 EPA Proposes Cleanup Plan for Area 1 of the Kalamazoo River**

RETURN SERVICE REQUESTED

FIRST CLASS

United States  
 Environmental Protection  
 Agency  
 U.S. EPA Region 5 Superfund Division  
 Saginaw Community Information Office  
 804 S. Hamilton St., Suite 111  
 Saginaw, MI 48602

